



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
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NCBC DAVISVILLE
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May 5, 1997

Mr. Philip Otis
U.S. Department of the Navy
Northern Division - NAVFAC
10 Industrial Highway
Code 1811/PO - Mail Stop 82
Lester, PA 19113-2090

Re: Draft Final Feasibility Study, dated April 4, 1997
Site 7 Calf Pasture Point
Former Naval Construction Battalion Center, Davisville, RI

Dear Mr. Otis:

The Environmental Protection Agency, Region I (EPA) has reviewed the above captioned feasibility study (FS), and the Navy's Response, dated April 1997, to EPA Comments, dated February 28, 1997, on the Draft Feasibility Study for Site 7, pursuant to § 7.6 of the NCBC Federal Facility Agreement (FFA).

While most of EPA's comments have been adequately addressed, the Navy has not satisfactorily addressed a number of critical comments, particularly those relating to EPA's designation of applicable or relevant and appropriate requirements (ARARs), including the designation of the Resource Conservation and Recovery Act (RCRA). In the attached comments, EPA has referenced those February 28, 1997 EPA comments which have not been properly addressed and the reasons the Navy's responses to the comments are inadequate.

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), section 121, requires that response actions meet ARARs and specifically delineates RCRA as a federal ARAR. Moreover, in FFA section 20.2, the parties specifically agreed that RCRA is to be considered an ARAR in the NCBC cleanup. In the particular circumstances of Site 7, EPA has determined, pursuant to FFA section 7.6(g), that RCRA is relevant and appropriate.

Please be advised that failure of the Navy to include in the FS all of the ARARs designated by EPA, including RCRA, and to demonstrate that these ARARs would be met by the alternatives renders this FS legally insufficient because the alternatives do not meet one of the required statutory criteria. As a result, EPA does not approve the issuance of the FS as a final primary document.

EPA is hopeful that, after reviewing the attached comments on the Navy's responses, the Navy



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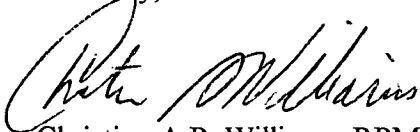
will incorporate the comments into the FS and issue a new draft final document. However, in the event the Navy chooses not to do so, please be advised that this letter and attachment shall constitute EPA's written statement of dispute relating to the inadequacy of the FS, pursuant to FFA section 13.3.

In order that progress on Site 7 not be delayed, I would appreciate hearing from you at your earliest convenience. If EPA does not receive a favorable response to this letter by May 23, 1997, we will invoke formal dispute resolution under the FFA section 13.

We are also in the process of responding to the draft-final RI. Those comments will be forwarded to you by Thursday May 8, 1997. We have some continuing concerns with the extent of characterization of the site, so in order to resolve these issues as amicably as possible, we propose to meet on Friday May 16, 1997. I have reserved a conference room here in Boston for our technical discussions concerning the Site 7 RI/FS comments.

If you have any questions, or would like to discuss this matter, please contact me (617) 573-5736.

Sincerely,



Christine A.P. Williams, RPM
Federal Facilities Superfund Section

Enclosure

cc: Warren Angell II, RIDEM
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George Horvat, Dynamac
Jim Shultz, EA

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Response to Comment #2

The Navy is advised that CERCLA section 121 requires that the alternatives must comply with all ARARs, including RCRA. Further, the NCP requires that the alternatives evaluated must comply with ARARs. 40 CFR 300.430(e)(9)(iii)(B). The Navy's assertion that the Site is being investigated under the Superfund program is correct; however, CERCLA and the implementing regulations require the Navy evaluate alternatives that meet ARARs. EPA has determined that RCRA is a relevant and appropriate ARAR for Site 7. RCRA must therefore be included in the ARAR tables, and the Navy must demonstrate how the alternatives, including Alternative 2, will meet the RCRA requirements.

EPA also takes exception to the Navy's proposed 5 year monitoring program. A 5 year monitoring program does not meet the RCRA requirement for monitoring which specifically requires monitoring as long as contamination is left at the site that may migrate to and beyond the boundaries. While in the CERCLA process the analysis of alternatives is only required to be over a 30 year period, the Navy will be required to monitor the contamination as long as it poses a threat to human health or to the environment.

In general, the Navy's proposed list of monitoring wells for LTM purposes falls short of what is needed. First, the lateral and vertical coverage available through the current monitoring well network is insufficient in many areas. In general, the southern and western margins of the site as well as the interior wetland areas (i.e., interior to the dune line along the southern and southeastern shoreline) are general areas which are insufficiently monitored by existing monitoring wells. Additionally, monitoring of surface water and sediment in the known and potential discharge locations of the plume will need to be included in tandem with ground water sampling.

The locations of additional permanent ground water, surface water, sediment sampling points will need to be evaluated and discussed only after a greater density of additional field data is collected. In some cases, data gaps are already known, but the degree of uncertainty with respect to ground water discharge to surface water and sediment necessitates a greater level of effort towards identifying additional locations for permanent monitoring points which target the discharge areas. In this context, EPA advocates the use of real-time screening data such as passive sampling technologies, direct push methods (e.g., micro-wells), vertical profiling, etc. as a preliminary step in identifying the optimum locations for permanent sampling locations. The results of the additional vertical conductivity profiling (i.e., EM-39) may also be used to gain a better understanding of the adequacy of current well locations and screened intervals in context of the dynamics of saline and fresh water interaction. EPA anticipates analyzing these various data prior to finalizing the list of additional shallow and deep monitoring well locations, as well as surface water and sediment sampling locations. Never the less, various opportunities for vastly improving LTM coverage are suggested from the current data, which offered as a starting point for LTM discussions, as follows.

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Navy's proposed wells for plume monitoring: Alternatives 2 through 4 propose that MW07-22S/D (upgradient); MW07-19S and MW07-21S/R (downgradient); and MW07-11D and MW07-25D/R (side-gradient) be monitored to evaluate the plume. Alternative 5 includes MW07-22S/D (upgradient) only and explains that side gradient wells are not required due to vertical barriers and downgradient wells are not required due to performance monitoring wells. The following issues are identified with respect to the Navy's proposed wells for the evaluation of the plume. Additional issues are likely to become evident following additional field data collection efforts, (e.g., borehole conductivity logging, vertical profiling, direct-push sampling, passive sampling methods, etc.):

A. At a minimum, the following additional wells should be monitored in the shallow zone: MW23S and MW24S. These wells are essential to the evaluation of the performance of the remedy since these wells are within the known plume discharge area. The purpose of monitoring MW19S should be clarified. Additional shallow wells should be installed at the MW25 cluster and MW12 cluster to improve coverage in the western part of the plume.

B. At a minimum, the following additional wells should be monitored in the deep zone: MW23D and MW21D. These wells are essential to the evaluation of the performance of the remedy since these wells are within the known plume discharge area.

C. Based on the well head distribution data at low and high tides, the deep and bedrock groundwater is migrating to the south toward Narragansett Bay (note the orientation of the directional arrows on Figures 1-17 and 1-18), as opposed to the contaminant flow which is west and south west toward Allen Harbor. With respect to the location of the source, MW07-11D is a down-gradient well (not a side-gradient well; see Figure 1-17); MW07-21R is a side-gradient well (not a down-gradient well; see Figure 1-18). Since the levels of VOC in the eastern part of the site indicate that the contaminants are in the dissolved phase, at a minimum, it may be prudent to install an additional rock well in the groundwater flow direction in the location of existing MW11D.

D. For Alternative 5, limited monitoring of side-gradient wells is warranted to ensure the integrity of the sheet pile walls is maintained. Since the sheet pile walls are driven down to an uneven bedrock topography there is potential for some deep ground water to pass under the walls and additionally the walls would not prevent the migration of bedrock ground water which is known to be contaminated. In this respect, the LTM points selected for this alternative must be sufficient to evaluate the same performance criteria as the other alternatives, particularly in the down-gradient discharge areas. Therefore, it is recommended that side-gradient deep and bedrock monitoring wells be added as well as downgradient bedrock ground water monitoring wells (the installation of downgradient bedrock monitoring wells would be needed - see next comment). The monitoring of deep ground water monitoring wells downgradient is included in the system performance

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monitoring (see Table 4-8, Page 1).

The monitoring wells, surface water and sediment sampling locations proposed for the evaluation of the ground water plume should be considered carefully with respect to the location of the source, the ground water migration direction, the ability of the selected wells to provide the needed information, and the ground water/surface water discharge location(s). As the potential human receptors to this plume are mainly the recreational shell fishers/beachcombers, EPA is most concerned with the nearshore/onshore mudflat/wetland discharge locations. Vertical profiling of the shoreline and interior wetlands will need to be completed in order to identify efficient sampling locations to determine the protectiveness of the remedy. Extensive subtidal investigation may not be warranted with respect to the potential risks at this site.

Parameters proposed for monitoring: Alternatives 2 through 5 only include TCL VOC for monitoring of the ground water plume (plume evaluation). Since the ground water contains elevated levels of several inorganics, surface water and sediment monitoring at the known and potential ground water discharge locations should include inorganics as well as VOCs.

Response to Comment 5: The Navy's response states that the ground water monitoring program specified under each alternative except the No Action alternative, will effectively monitor the extent of the plume and ensure that it will not generate future risks. The proposed monitoring for plume evaluation for each alternative is indicated as 5 years which will not ensure that future risks are not generated beyond the 5 year period. See EPA Comment 2.

Response to Comment #8

The discharge of groundwater is in the nearshore environment. The sediments and surface water in the vicinity of the groundwater discharge points must also be included in the monitoring program. The human and the environmental exposures to groundwater discharge in the form of contaminated sediments and surface water must be monitored. Therefore, change both text and tables to include sediment and surface water monitoring with the ground water monitoring.

Response to Comment #12: See EPA Comment 2.

Response to Comment #21: In the draft version, Section 1.4.3 contained a paragraph on the nature and extent of metals in soil. As explained by the Navy's response to Comment 15, Sections 1.4.1 through 1.4.3 were moved to the end of Section 1.2.3.3. However, the metals in soil information for Phase II presented in the draft was not transferred to Section 1.2.3.3 as expected. This information should be added.

Response to Comment #24: The Navy states that the VOC concentrations are generally higher in the shallow and bedrock ground water than in the deep ground water along the shoreline and Figures 1-19 through 1-21 are referenced. It is not evident from these figures that this statement

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is valid.

Figure 1-19 (shallow ground water) shows MW07-21S is the only shoreline well with contamination. The total chlorinated VOC detected was 1481 $\mu\text{g/L}$.

Figure 1-20 (deep ground water) shows MW07-23D with a total chlorinated VOC concentration of 1022 $\mu\text{g/L}$; MW07-21D with 140 $\mu\text{g/L}$; MW07-12D with 99 $\mu\text{g/L}$ and MW07-25D with 6745 $\mu\text{g/L}$.

Figure 1-21 (bedrock ground water) shows MW07-21R with a total chlorinated VOC concentration 8390 $\mu\text{g/L}$ and MW07-25R with 4400 $\mu\text{g/L}$.

Based on this information, the deep and bedrock ground water concentrations are generally higher than the shallow ground water along the shoreline. Furthermore, the extent of contamination along the shoreline is greater in the deep and bedrock ground water. Taking into account the results of the USGS borehole logging in December of 1996 which demonstrated potential upward movement of water out of the bedrock, Section 1.4.6.2 should be modified.

Response to Comment #25: See Comment 24 above. Also, the new reference in Section 1.4.6.3 to Section 1.4.5.3 is incorrect (there is no Section 1.4.5.3) and should be Section 1.4.6.2.

Response to Comment #27 (49 and 11)

The Navy's assumption that surface water and sediment are offsite media is incorrect. The groundwater has been shown to discharge at the shore. Potential discharge of contaminants to interior wetlands (i.e., within the dune line) is another issue. The sediment and surface water in the vicinity of the groundwater discharge must be monitored to determine if both human health and ecological risks due to exposures to sediment and surface water will change from the current levels. Therefore, change both text and tables to include sediment and surface water monitoring with the ground water monitoring.

Response to Comment #32

The Navy's assumption that there will be only one 5 year review is incorrect. CERCLA, the NCP and the FFA require that 5 year reviews be conducted as long as the waste remains in place and causes a risk. DNAPL VOC sources are not known to disappear in 5 years, rather, time-frames on the order of hundreds of years may be needed for the DNAPL source to naturally attenuate. Therefore, change the text and the tables to indicate at least six-5 year reviews for the 30 year analysis.

Response to Comment #40: The Navy has removed the phrase "after 20 years"; however, the rest of the sentence "since the original disposals, no adverse impacts have been identified in shoreline sediment or shellfish" remains in Section 3.2.2.2. This statement still retains its original meaning.

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Although adverse impacts have not been identified to date in the shoreline sediment or shellfish, this does not preclude potential future impacts if the hot areas of the plume are not contained or treated prior to discharge to the shoreline. Also see EPA Comment 2.

Response to Comment 46: See EPA Comment 2.

Response to Comment 51: See Comment 40. (Note: This refers to the first Comment 51 which is listed twice in the Navy's Response to EPA Comments).

Response to Comment 55: See EPA Comment 40.

Response to Comment 58: See EPA Comment 40.

Response to Comment 60: See EPA Comment 2.

Response to Comment 64: See EPA Comment 2.

Response to Comment #67

AWQC must be retained as an ARAR in the Chemical Specific ARAR tables since the groundwater discharges to the surface water at the shoreline. Rhode Island and EPA do not currently have a MOA for groundwater classification; therefore, Federal classification is the controlling factor. MCLs must be retained as an ARAR in the Chemical Specific ARAR tables since the groundwater could potentially be used for drinking water in the future.

Response to Comment #69.

See above comment on Response to Comment #67.

Response to Comment #73

See above comment on Response to Comment #2. Comment #73 pertained to action specific performance standards for the Limited Action Alternative 2. In its response, the Navy incorrectly assumed that the standards were for cleanup levels. The Standards would be used to determine if the Limited Action remedy is performing as designed by comparing the monitoring data with the standards. Therefore, Table 3-1A must be added for the Limited Action Alternative 2.

Response to Comment #75.

See above comment on Response to Comment #2.

Response to Comment #77: Given that the discharge of ground water is in the near shore environment and that the potential discharge points on-site are currently not known, the monitoring of the sediment that has been deleted from Table 2-1 should be included again.

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Response to Comment #80: The stated change to Table 2-6 was not made. Antimony is still listed as ND. The change from ND to 27.1 $\mu\text{g/L}$ should be made for both Table 2-6 and Table 2-6B.

Response to Comment #82

While EPA agrees with the Navy's response to this specific comment, EPA will still require the Navy monitor the groundwater/surface water discharge points to determine if the seeps due to the plume contain contaminants above AWQC. AWQC is an appropriate screening value for demonstrating the effectiveness of the remedy. The performance criteria for the remedy should include AWQC as a trigger for a subsequent risk assessment to determine if the exposure to surface water in the seeps at the plume ground water/surface water discharge areas with exceedences of AWQC would cause a risk to human health or the environment.

Response to Comment #86.

See above comment on Response to Comment #67.

Response to Comment #87.

See above comment on Response to Comment #67.

Response to Comment #89

The Navy incorrectly states that all onsite wells appear to be screened in the proper locations. The USGS has not finished logging the site and therefore the possibility of additional wells and/or borings to be added to the monitoring network still exists. The Navy should plan on installing borings, yearly, at the onshore/nearshore groundwater discharge zones to monitor the possible recreational human health risks and possible ecological risks due to exposures to the possibly contaminated sediment.

The wells that may need to be re-installed with a different screen location include MW07-10, MW07-12, MW07-23, and MW07-24. Based on the USGS logging data for MW07-10, a freshwater lens appears to be identified approximately 20 feet below ground surface, while well screens for MW07-10 are located less than 10 feet bgs and between 25 and 35 feet bgs. A freshwater lens appears to be present in MW07-12 at a depth of 15 feet, while well screen is located at a depth of approximately 25 to 35 feet bgs. MW07-23 exhibits characteristics of a freshwater lens at approximately 15 feet bgs, while the MW07-23S screen is set above 10 feet bgs and MW07-23D is set below approximately 35 feet bgs. MW07-24 exhibits characteristics of a freshwater lens at an approximate depth of 32 feet bgs, while the well screens are set at depths from 10 to 20 feet bgs in the shallow well and approximately 42 to 52 feet bgs in the deep well.

The borehole logging exhibited a freshwater lens located between the screen locations of MW07-24S/D at approximately 32 feet bgs. In the December meeting, the concern regarding the well screen locations for MW07-24S/D was dismissed because of the low VOC contamination

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identified in two wells upgradient of these wells. According to the Navy, these wells MW07-13 and MW07-11 had total VOCs of 44 $\mu\text{g/l}$ and 2 $\mu\text{g/l}$, respectively. Due to the absence of significant contamination in these two upgradient wells, it was suggested that the screen locations in MW07-24S/D were not a critical issue. However, it should be noted that logging data is not available for wells MW07-13S/D and MW07-11D which would indicate whether these two wells are screened in the optimum location. The lack of this information does not allow the argument that low contamination identified upgradient is justification for not addressing the potentially improper screen location of MW07-24. The location of the well screen in MW07-24 is expected to be important with respect to long-term monitoring if the plume continues to migrate to the south (see Figures 1-17 and 1-20).